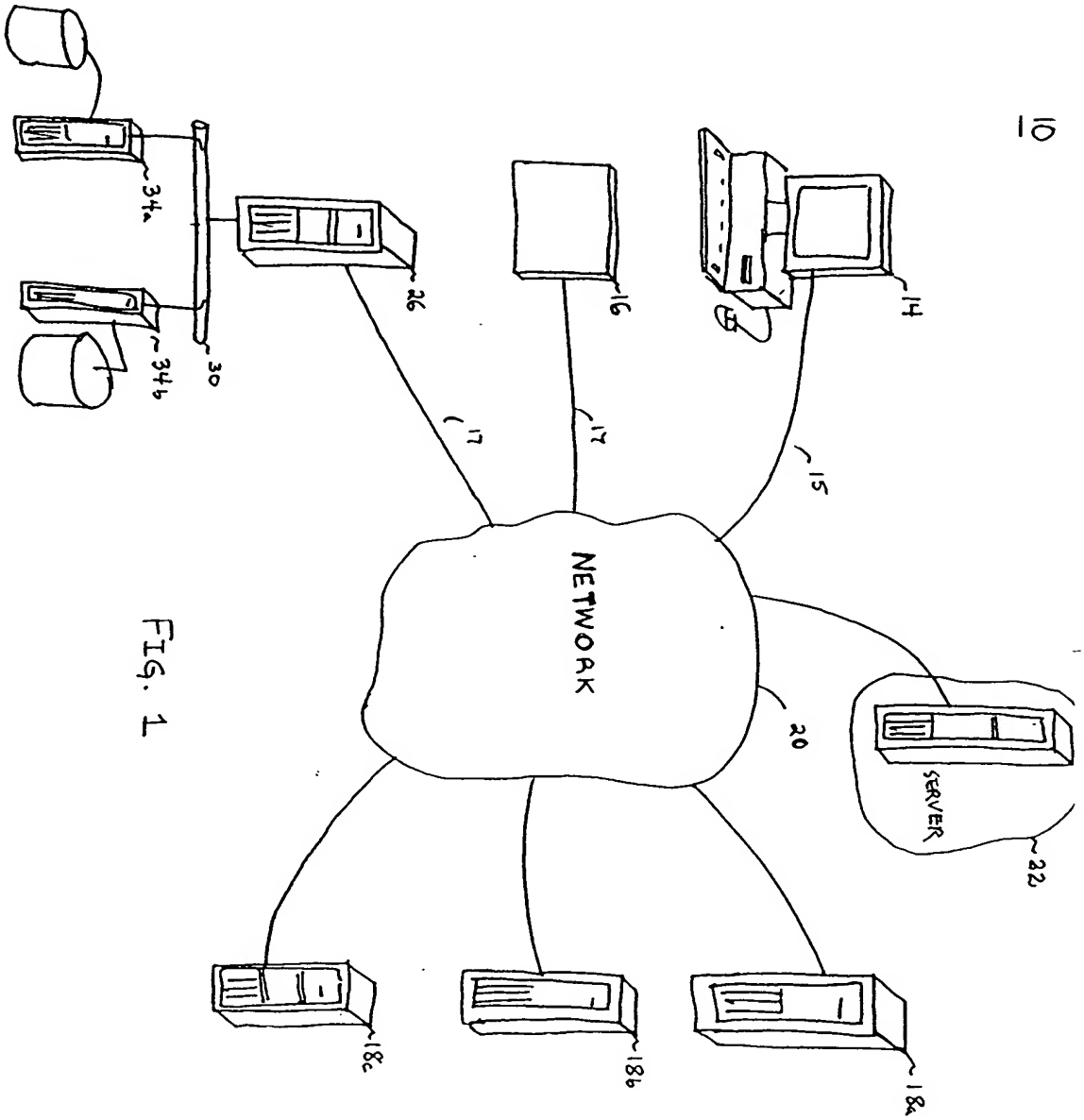

FIG. 1

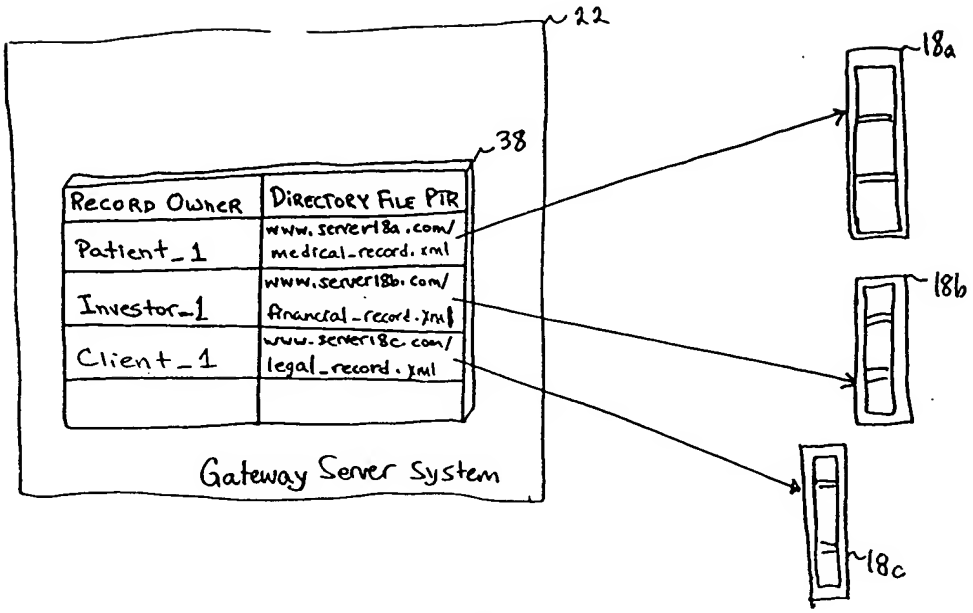
22
18a
38
Record Owner
Directory File PTR
Patient_1
www.server18a.com/ medical_record.xml
Investor_1
www.server18b.com/ financial_record.xml
Client_1
www.server18c.com/ legal_record.xml
18b
18c
Gateway Server System

FIG. 2A

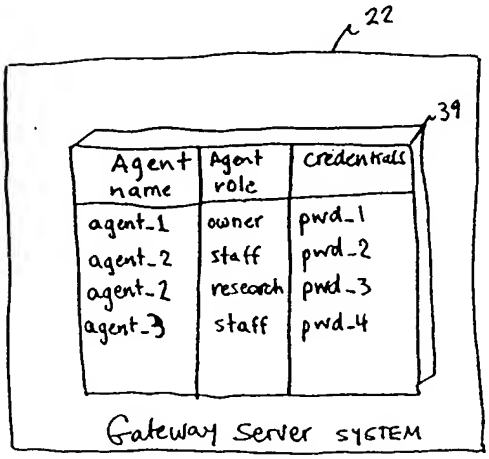
22
39
Agent name
Agent role
credentials
agent_1
owner
pwd_1
agent_2
staff
pwd_2
agent_2
research
pwd_3
agent_3
staff
pwd_4
Gateway Server SYSTEM

FIG 2B

Document Type Definition

```
<!-- Root Directory Structure -->

<!ELEMENT Record-root (Owner, Header, Data)>
<!ATTLIST Record-root name CDATA '/'>                                   ~40

<!ELEMENT Record-object (Header, Data, Annotation*)>
<!ATTLIST Record-object name CDATA #REQUIRED
                        type CDATA #IMPLIED                             ~44
                        url  CDATA #IMPLIED>

<!ELEMENT Header (Author, Owner?, Creation-date, Privileges)>           ~48

<!ELEMENT Author EMPTY>
<!ATTLIST Author alias CDATA #REQUIRED>                                 ~52

<!ELEMENT Owner EMPTY>
<!ATTLIST Owner alias CDATA #REQUIRED>                                  ~56

<!ELEMENT Creation-date EMPTY>
<!ATTLIST Creation-date time CDATA #IMPLIED>                            ~60

<!ELEMENT Privileges (Privilege*)>

<!ELEMENT Privilege EMPTY>
<!ATTLIST Privilege role     CDATA #REQUIRED
                    read     (t|f) 'f'                                  ~64
                    create   (t|f) 'f'
                    modify   (t|f) 'f'
                    delete   (t|f) 'f'
                    annotate (t|f) 'f' >

<!-- the data section -->                                               ~68

<!ELEMENT Data (Record-object*)>
<!ATTLIST Data type CDATA 'text/xml'
               url  CDATA #REQUIRED>

<!ELEMENT Annotation (Ann-author, Ann-date, Ann-text)>
<!ELEMENT Ann-author (#PCDATA)>
<!ELEMENT Ann-date (#PCDATA)>                                           ~72
<!ATTLIST Ann-date datestring CDATA #IMPLIED>
<!ELEMENT Ann-text (#PCDATA)>
```

FIG. 3

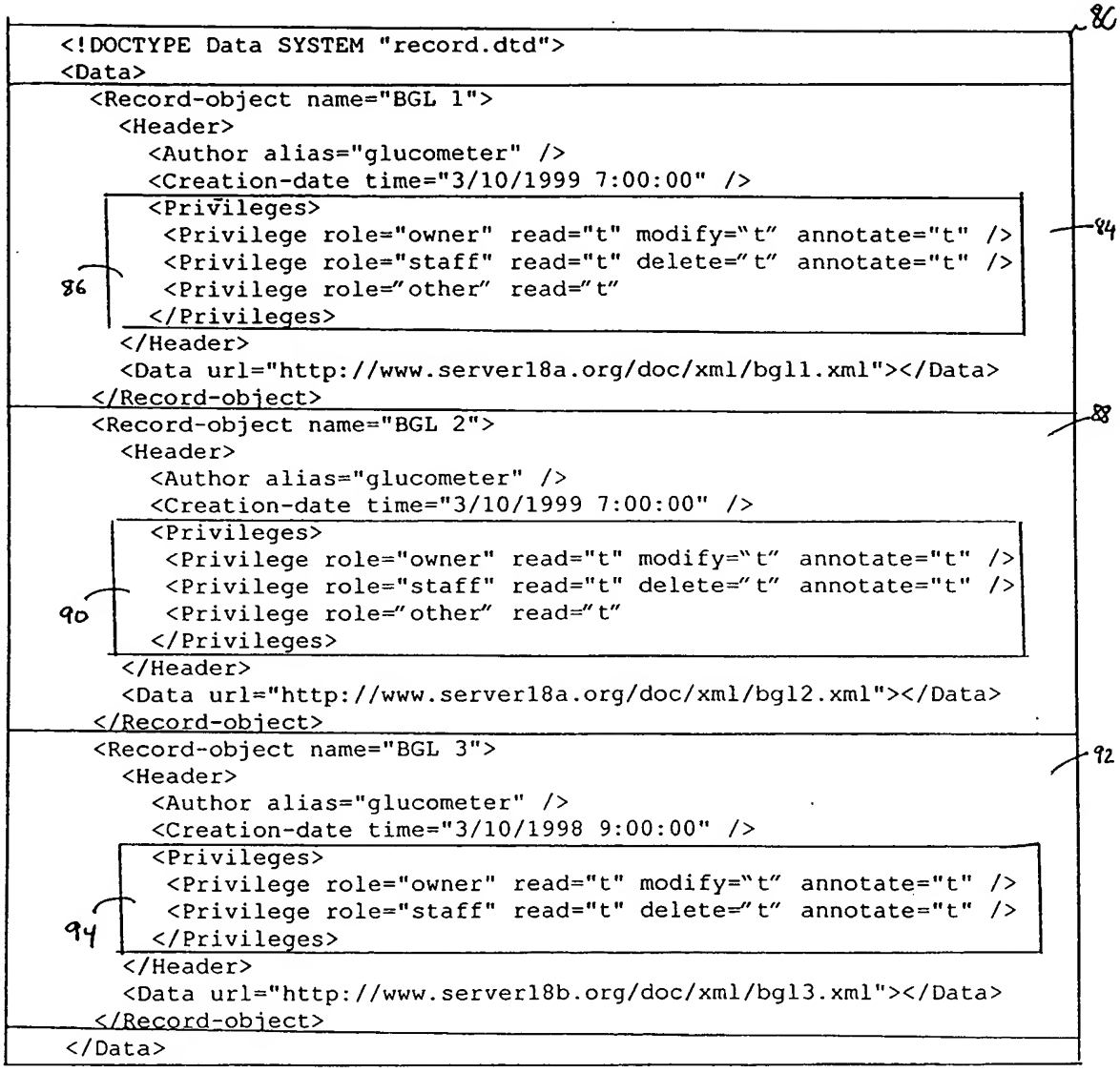
82
<!DOCTYPE Data SYSTEM "record.dtd">
<Data>
<Record-object name="BGL 1">
<Header>
<Author alias="glucometer" />
<Creation-date time="3/10/1999 7:00:00" />
<Privileges>
<Privilege role="owner" read="t" modify="t" annotate="t" />
<Privilege role="staff" read="t" delete="t" annotate="t" />
<Privilege role="other" read="t"
</Privileges>
84
86
</Header>
<Data url="http://www.server18a.org/doc/xml/bgl1.xml"></Data>
</Record-object>
88
<Record-object name="BGL 2">
<Header>
<Author alias="glucometer" />
<Creation-date time="3/10/1999 7:00:00" />
<Privileges>
<Privilege role="owner" read="t" modify="t" annotate="t" />
<Privilege role="staff" read="t" delete="t" annotate="t" />
<Privilege role="other" read="t"
</Privileges>
90
</Header>
<Data url="http://www.server18a.org/doc/xml/bgl2.xml"></Data>
</Record-object>
<Record-object name="BGL 3">
92
<Header>
<Author alias="glucometer" />
<Creation-date time="3/10/1998 9:00:00" />
<Privileges>
<Privilege role="owner" read="t" modify="t" annotate="t" />
<Privilege role="staff" read="t" delete="t" annotate="t" />
</Privileges>
94
</Header>
<Data url="http://www.server18b.org/doc/xml/bgl3.xml"></Data>
</Record-object>
</Data>

FIG. 4

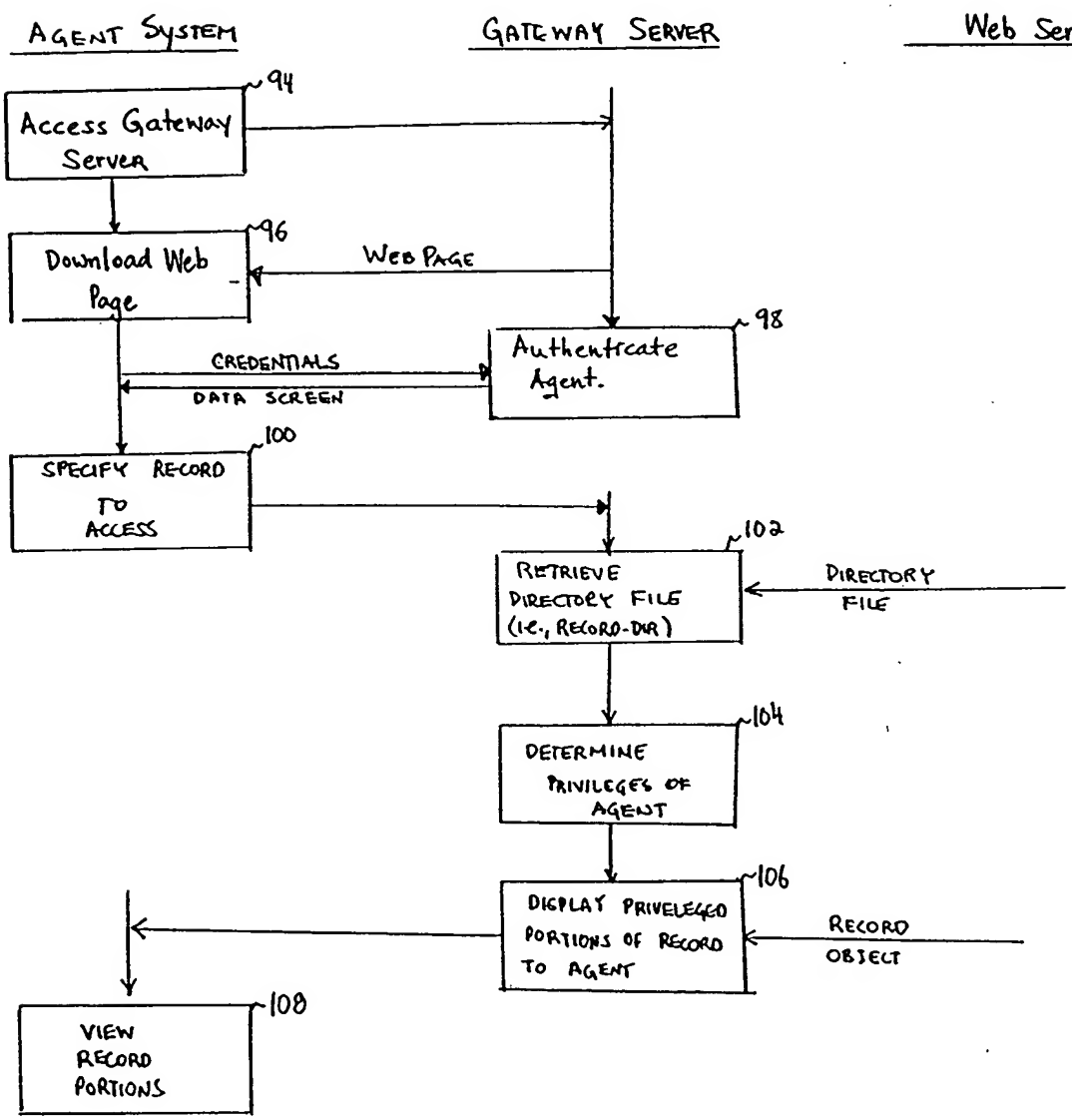
AGENT SYSTEM
GATEWAY SERVER
Web Server(s)
94
Access Gateway Server
96
Download Web Page
WEB PAGE
98
Authenticate Agent.
CREDENTIALS
DATA SCREEN
100
SPECIFY RECORD TO ACCESS
102
RETRIEVE DIRECTORY FILE (i.e., RECORD-DIR)
DIRECTORY FILE
104
DETERMINE PRIVILEGES OF AGENT
106
DISPLAY PRIVILEGED PORTIONS OF RECORD TO AGENT
RECORD OBJECT
108
VIEW RECORD PORTIONS

FIG. 5

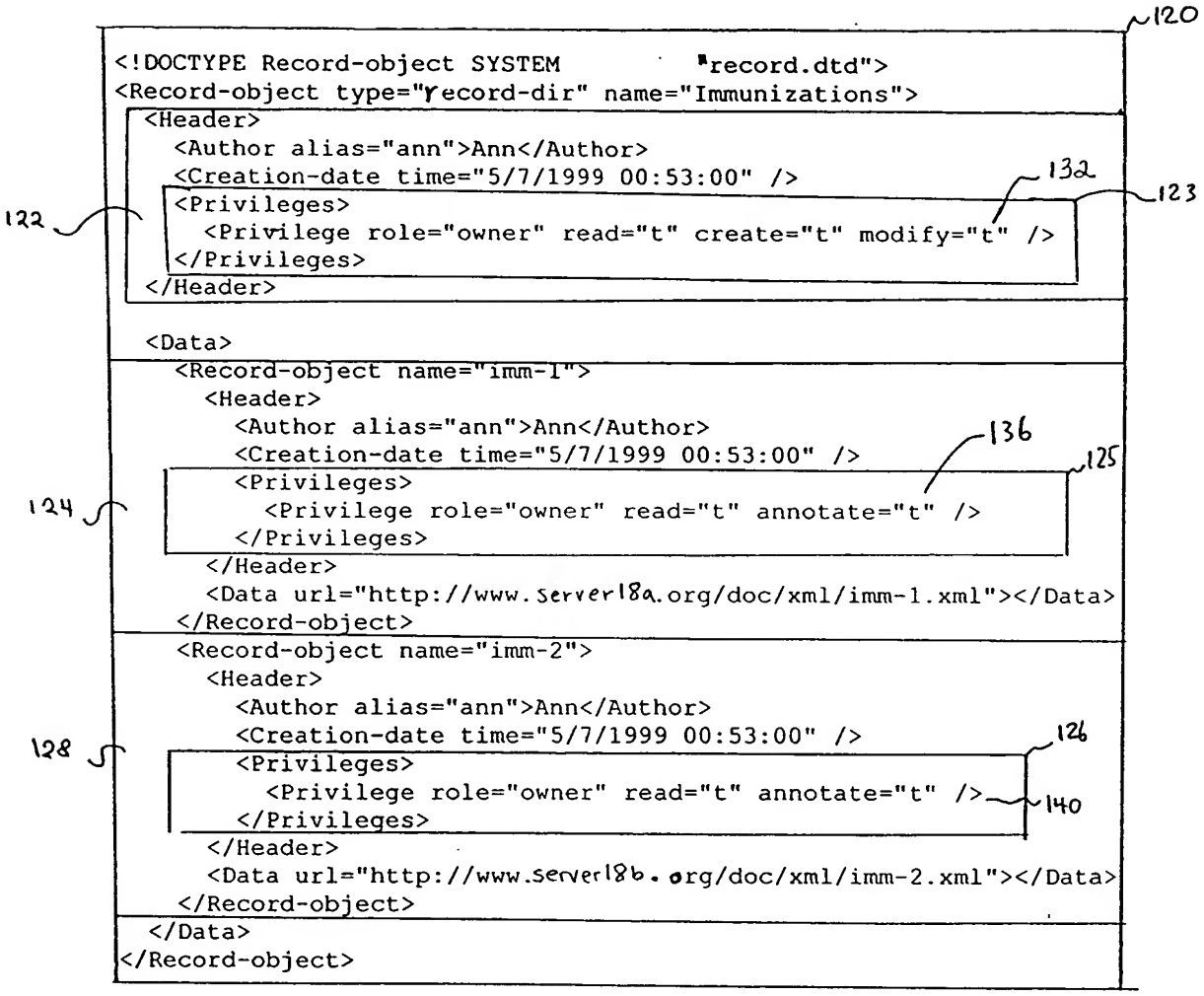
120
<!DOCTYPE Record-object SYSTEM "record.dtd">
<Record-object type="record-dir" name="Immunizations">
<Header>
<Author alias="ann">Ann</Author>
<Creation-date time="5/7/1999 00:53:00" />
<Privileges>
<Privilege role="owner" read="t" create="t" modify="t" />
</Privileges>
</Header>
<Data>
<Record-object name="imm-1">
<Header>
<Author alias="ann">Ann</Author>
<Creation-date time="5/7/1999 00:53:00" />
<Privileges>
<Privilege role="owner" read="t" annotate="t" />
</Privileges>
</Header>
<Data url="http://www.server18a.org/doc/xml/imm-1.xml"></Data>
</Record-object>
<Record-object name="imm-2">
<Header>
<Author alias="ann">Ann</Author>
<Creation-date time="5/7/1999 00:53:00" />
<Privileges>
<Privilege role="owner" read="t" annotate="t" />
</Privileges>
</Header>
<Data url="http://www.server18b.org/doc/xml/imm-2.xml"></Data>
</Record-object>
</Data>
</Record-object>
122
123
124
125
126
128
132
136
140

FIG. 6A

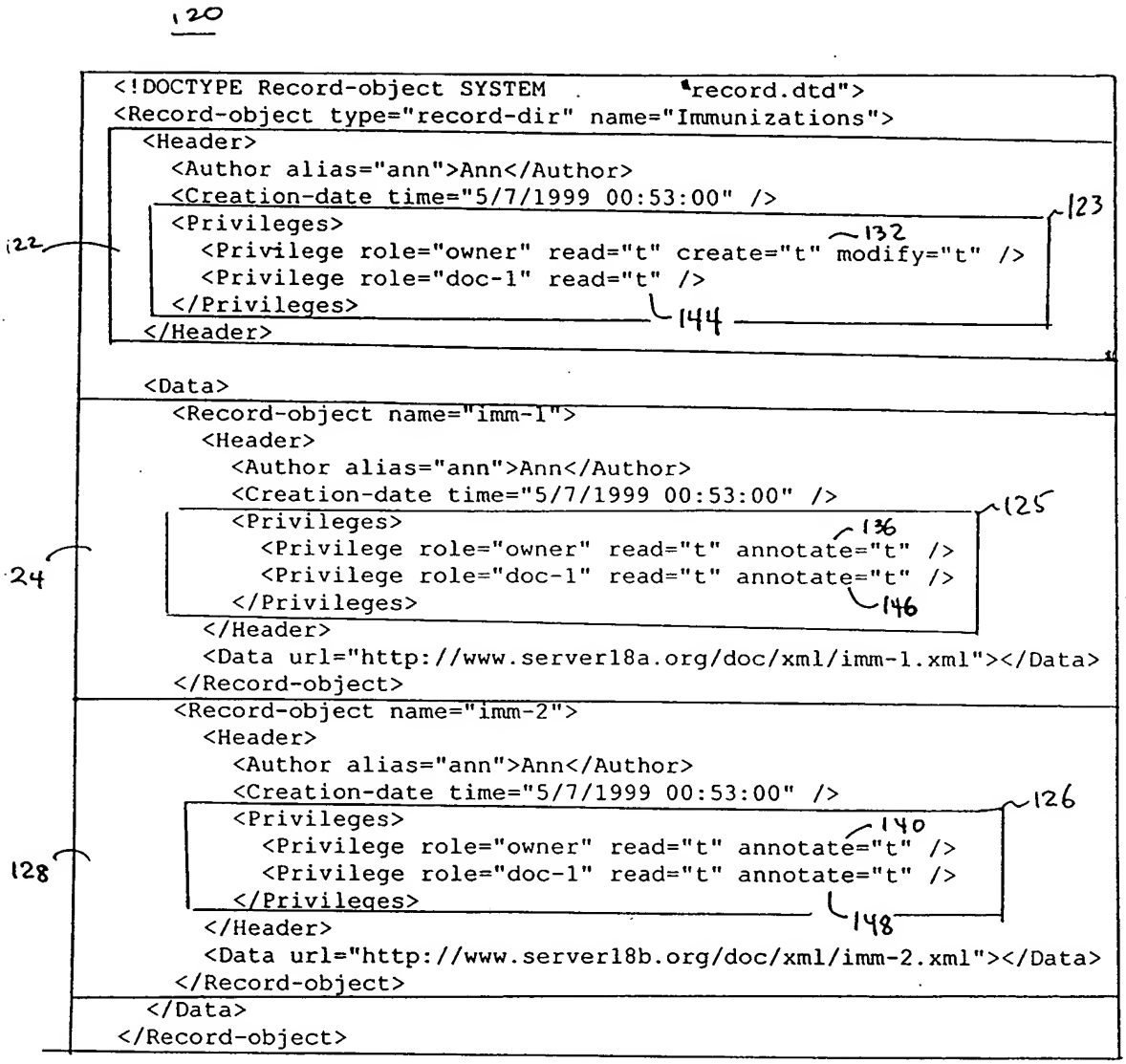
120
<!DOCTYPE Record-object SYSTEM "record.dtd">
<Record-object type="record-dir" name="Immunizations">
<Header>
<Author alias="ann">Ann</Author>
<Creation-date time="5/7/1999 00:53:00" />
<Privileges>
<Privilege role="owner" read="t" create="t" modify="t" />
<Privilege role="doc-1" read="t" />
</Privileges>
</Header>
<Data>
<Record-object name="imm-1">
<Header>
<Author alias="ann">Ann</Author>
<Creation-date time="5/7/1999 00:53:00" />
<Privileges>
<Privilege role="owner" read="t" annotate="t" />
<Privilege role="doc-1" read="t" annotate="t" />
</Privileges>
</Header>
<Data url="http://www.server18a.org/doc/xml/imm-1.xml"></Data>
</Record-object>
<Record-object name="imm-2">
<Header>
<Author alias="ann">Ann</Author>
<Creation-date time="5/7/1999 00:53:00" />
<Privileges>
<Privilege role="owner" read="t" annotate="t" />
<Privilege role="doc-1" read="t" annotate="t" />
</Privileges>
</Header>
<Data url="http://www.server18b.org/doc/xml/imm-2.xml"></Data>
</Record-object>
</Data>
</Record-object>
122
123
132
144
124
125
136
146
128
126
140
148

FIG. 6B